PT-05

PI 1154166

THE UNITED STATES OF AMERICA

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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

April 20, 2004

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE.

APPLICATION NUMBER: *60/441,500*
FILING DATE: *January 21, 2003*
RELATED PCT APPLICATION NUMBER: *PCT/US04/01469*

By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS

N. WOODSON
Certifying Officer

PRIORITY DOCUMENT
SUBMITTED OR TRANSMITTED IN COMPLIANCE WITH RULE 17.1(a) OR (b)

01-22-03 60/441500 01/21/03

PTO/SB/16 (10-01)
Approved for use through10/31/2002. OMB 0651-0032
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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No.	EL542575066US

INVENTOR(S)

Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
Jordan S.	KAVANA	Miami, Florida

☐ *Additional inventors are being named on the _____ separately numbered sheets attached hereto*

TITLE OF THE INVENTION (500 characters max)

VIRTUAL REALITY MUSICAL GLOVE SYSTEM

Direct all correspondence to: **CORRESPONDENCE ADDRESS**

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ENCLOSED APPLICATION PARTS *(check all that apply)*

☑ Specification *Number of Pages*	7	☐ CD(s), Number	
☐ Drawing(s) *Number of Sheets*		☑ Other (specify)	Appendix (Pages 1-31)
☐ Application Data Sheet. See 37 CFR 1.76			

METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT

☑ Applicant claims small entity status. See 37 CFR 1.27.		FILING FEE AMOUNT ($)
☐ A check or money order is enclosed to cover the filing fees		
☑ The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number:	18-2262	$80.00
☐ Payment by credit card. Form PTO-2038 is attached.		

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☑ No.

☐ Yes, the name of the U.S. Government agency and the Government contract number are: _____

Respectfully submitted,

SIGNATURE _____

Date 01/21/2003

TYPED or PRINTED NAME Robert M. Schwartz

REGISTRATION NO. *(if appropriate)* 29,854

Docket Number: 47135-0003

TELEPHONE 954-527-6252

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C. 20231.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

January 21, 2003

COVER SHEET

Box PROVISIONAL PATENT APPLICATION
Commissioner for Patents
Washington, .D.C. 20231

Re: New U.S. Provisional Patent Application
Inventor: Jordan S. KAVANA
Title: VIRTUAL REALITY MUSICAL GLOVE SYSTEM
Attorney Docket No. 47135-0003

Sir:

Enclosed are the following documents for filing:

[X] Fee Transmittal Form (in duplicate) with authorization to charge fees – 2 pages

[X] Provisional Application with Patent Cover Sheet (in duplicate) – 2 pages

[X] Specification - 7 pages

[X] Appendix – 31 pages

[X] Return Receipt Postcard

These documents enclosed and referenced herein are being submitted under the "Express Mail" filing provisions, 37 CFR 1.10, and a filing date corresponding to the date of deposit is respectfully requested.

EXPRESS MAIL "mailing label No. EL542575066US – Deposited: January 21, 2003
Certificate of Mailing under 37 CFR 1.10

I hereby certify that these Papers are being deposited with the United States Postal Service "Express Mail Post Office to Addressee: service under 37 CFR 1.10 on the date indicated above and addressed to: BOX PROVISIONAL PATENT APPLICATION, Commissioner for Patents, Washington, D.C. 20231 on January 21, 2003.

Vernice V. Freebourne

January 21, 2003
Date

60144500 012103

PTO/SB/17 (10-01)
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01/21/03 ic914 U.S. PTO

FEE TRANSMITTAL for FY 2002

Patent fees are subject to annual revision.

TOTAL AMOUNT OF PAYMENT ($) 80.00

Complete if Known	
Application Number	
Filing Date	
First Named Inventor	Jordan S. KAVANA
Examiner Name	
Group Art Unit	
Attorney Docket No.	47135-0003

METHOD OF PAYMENT

1. ☑ The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:
   - Deposit Account Number: 18-2262
   - Deposit Account Name: Ruden, McClosky, Smith, Schuster & Russell, P.A.
   - ☑ Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17
   - ☑ Applicant claims small entity status. See 37 CFR 1.27
2. ☐ **Payment Enclosed:** ☐ Check ☐ Credit card ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	740	201	370	Utility filing fee	
106	330	206	165	Design filing fee	
107	510	207	255	Plant filing fee	
108	740	208	370	Reissue filing fee	
114	160	214	80	Provisional filing fee	80.00

SUBTOTAL (1) ($) 80.00

2. EXTRA CLAIM FEES

	Extra Claims		Fee from below		Fee Paid
Total Claims		-20** =		X	=
Independent Claims		- 3** =		X	=
Multiple Dependent					=

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
103	18	203	9	Claims in excess of 20
102	84	202	42	Independent claims in excess of 3
104	280	204	140	Multiple dependent claim, if not paid
109	84	209	42	** Reissue independent claims over original patent
110	18	210	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for *ex parte* reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	920	217	460	Extension for reply within third month	
118	1,440	218	720	Extension for reply within fourth month	
128	1,960	228	980	Extension for reply within fifth month	
119	320	219	160	Notice of Appeal	
120	320	220	160	Filing a brief in support of an appeal	
121	280	221	140	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,280	241	640	Petition to revive - unintentional	
142	1,280	242	640	Utility issue fee (or reissue)	
143	460	243	230	Design issue fee	
144	620	244	310	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Processing fee under 37 CFR 1.17(q)	
126	180	126	180	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	740	246	370	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	740	249	370	For each additional invention to be examined (37 CFR § 1.129(b))	
179	740	279	370	Request for Continued Examination (RCE)	
169	900	169	900	Request for expedited examination of a design application	
				Other fee (specify)	

*Reduced by Basic Filing Fee Paid SUBTOTAL (3) ($)

SUBMITTED BY				Complete (if applicable)	
Name (Print/Type)	Robert M. Schwartz	Registration No. (Attorney/Agent)	29,854	Telephone	954-527-6252
Signature				Date	01/21/2003

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PROVISIONAL PATENT APPLICATION

Title: VIRTUAL REALITY MUSICAL GLOVE SYSTEM

Inventor: Jordan S. KAVANA
Miami, Florida

TECHNICAL FIELD OF THE INVENTION

This invention relates generally to a sound effects device. More specifically, the present invention relates to a user controlled sound effects device that incorporates at least one wireless transmitter and at lest one wireless receiver that permits the user to play a variety of musical sound effects which are stored in the device.

BACKGROUND OF THE INVENTION

At the present time, there are a wide variety of sound effect devices designed within toys and the like. These sound effects are usually of poor quality and add to increase the cost of the toy. Furthermore, many toys are not equipped with sound effects. If a child possesses a wide variety of toys (toy guns, dolls, space ships, cars, dinosaurs, figurines, etc.) not equipped with sound effects, the child must improvise by creating his/her own sound effects.

For example, there are many toys for sale in today's market, however, none of the prior art sound effect devices provide the user with the ability to alter the order of sounds in a toy's programmed list of sound effects. In other words, the toy is limited to the order of the sound effects contained inside the toy as provided by the manufacturer. Second, when a child plays with a toy that contains sound effects, it is often difficult and disruptive for the child to manually push buttons on the object and play at the same time. Prior art designs simply do not allow the user to control the sound effects while playing with the toy in a more natural, realistic, or coordinated manner. In addition, such toys do not help develop the child's hand-eye coordination. Another disadvantage of prior art designs is the relatively poor sound quality.

"Data" gloves have been proposed for use as input devices for computer systems. For example, there are data gloves that use fiber-optic flexion sensors to determine how much each finger on the glove is bent. Such gloves also use an ultrasonic position sensor and a mercury switch orientation sensor mounted on the back-hand surface of the glove to determine the location of the glove and send this information to the computer used with the glove.

Other data gloves are designed to replace a computer keyboard. Such gloves used flex sensors and electrical contacts

on the fingertips to determine static positions representing the characters of the alphabet or engage contacts on the fingertips to be used as an input device for a video game.

The data gloves can be used in virtual reality environments with varying degrees of complexity. By correlating the position of the hand and the shape of the hand as sensed by the sensors on the glove to the position, shape and assigned function of a virtual object within the virtual environment, the host computer can interpret hand positions as instructions to manipulate the objects. More simply, by sensing the shape of the hand, the host computer can interpret the input as commands to the host system.

In flex sensing gloves, the glove can sense whether the glove is bent or not, but cannot accurately sense the degree of bend. In general, glove flexion of the fingers has not been used for rate control because the sensing is too difficult and the feedback to the user is not sufficiently accurate for efficient control. Virtual environment parameters such as the speed of flying have not generally been tied to the degree of the bend of a finger, and the firmness of grasp is not tied to how tightly a fist is made.

Additionally, methods of performing music on an electronic instrument are also known, and may typically be classified in either of three ways: (1) a method in which automatic chord progressions are generated by depression of a key or keys (for

example, Cotton Jr., et al., U.S. Pat. No. 4,449,437), or by generating a suitable chord progression after a melody is given by a user (for example, Minamitaka, U.S. Pat. No. 5,218,153); (2) a method in which a plurality of note tables is used for MIDI note-identifying information, and is selected in response to a user command (for example, Hotz, U.S. Pat. No. 5,099,738); and (3) a method in which performance of music on an electronic instrument can be automated using an indication system (for example, Shaffer et al., U.S. Pat. No. 5,266,735).

The first method of musical performance involves generating pre-sequenced or preprogrammed accompaniment. This automatic method of musical performance lacks the creativity necessary to perform music with the freedom and expression of a trained musician. This method dictates a preprogrammed accompaniment without user-selectable modifications in real-time, and is therefore unduly limited.

The second method of musical performance does not allow for all of the various note groups and/or features needed to initiate quality performance, with little or no training.

Thus, a need exists for a toy virtual reality glove that permits a user to generate and perform a variety of quality musical sound effects in a free form manner while developing increased coordination skills.

SUMMARY OF THE INVENTION

The present invention eliminates the above-mentioned needs for a toy virtual reality glove that permits a user to generate and perform a variety of quality musical sound effects in a free form manner while developing increased coordination skills

In accordance with the present invention, there is provided a virtual reality musical glove comprising a glove body having a plurality of finger pad sensors positioned in a first orientation, including a thumb sensor positioned in a second orientation; at least one wireless transmitter mounted on said glove body electrically connected to said plurality of finger pad sensors, and electrically connected to a power source; at least one wireless receiver to receive a signal generated by said at least one wireless transmitter; a signal generator to produce electronic signal indicative of music produced by a musical instrument, operatively engaged to said wireless transmitter and operatively actuated by at least one sensor of said plurality of finger sensors, wherein said electronic signal is transmitted by said wireless transmitter to said wireless receiver; and a sound generator to convert said electronic signal to a musical tone, operatively engaged to said wireless receiver

Although only a few exemplary embodiments of the present invention have been described in detail above and in the

accompanying Appendix, those skilled in the art will readily appreciate that numerous modifications are to the exemplary embodiments are possible without materially departing from the novel teachings and advantages of this invention. Accordingly, all such modifications are intended to be included within the scope of this invention as defined in the following numbered paragraph and accompanying Appendix.

A further description of the preferred embodiment is detailed in the numbered paragraphs a follows:

1. A virtual reality musical glove, comprising:

a glove body having a plurality of finger pad sensors positioned in a first orientation, including a thumb sensor positioned in a second orientation;

at least one wireless transmitter mounted on said glove body electrically connected to said plurality of finger pad sensors, and electrically connected to a power source;

at least one wireless receiver to receive a signal generated by said at least one wireless transmitter;

a signal generator to produce electronic signal indicative of music produced by a musical instrument, operatively engaged to said wireless transmitter and operatively actuated by at least one sensor of said plurality of finger sensors, wherein said electronic signal is transmitted by said wireless transmitter to said wireless receiver; and

a sound generator to convert said electronic signal to a musical tone, operatively engaged to said wireless receiver.

VR-HandBand

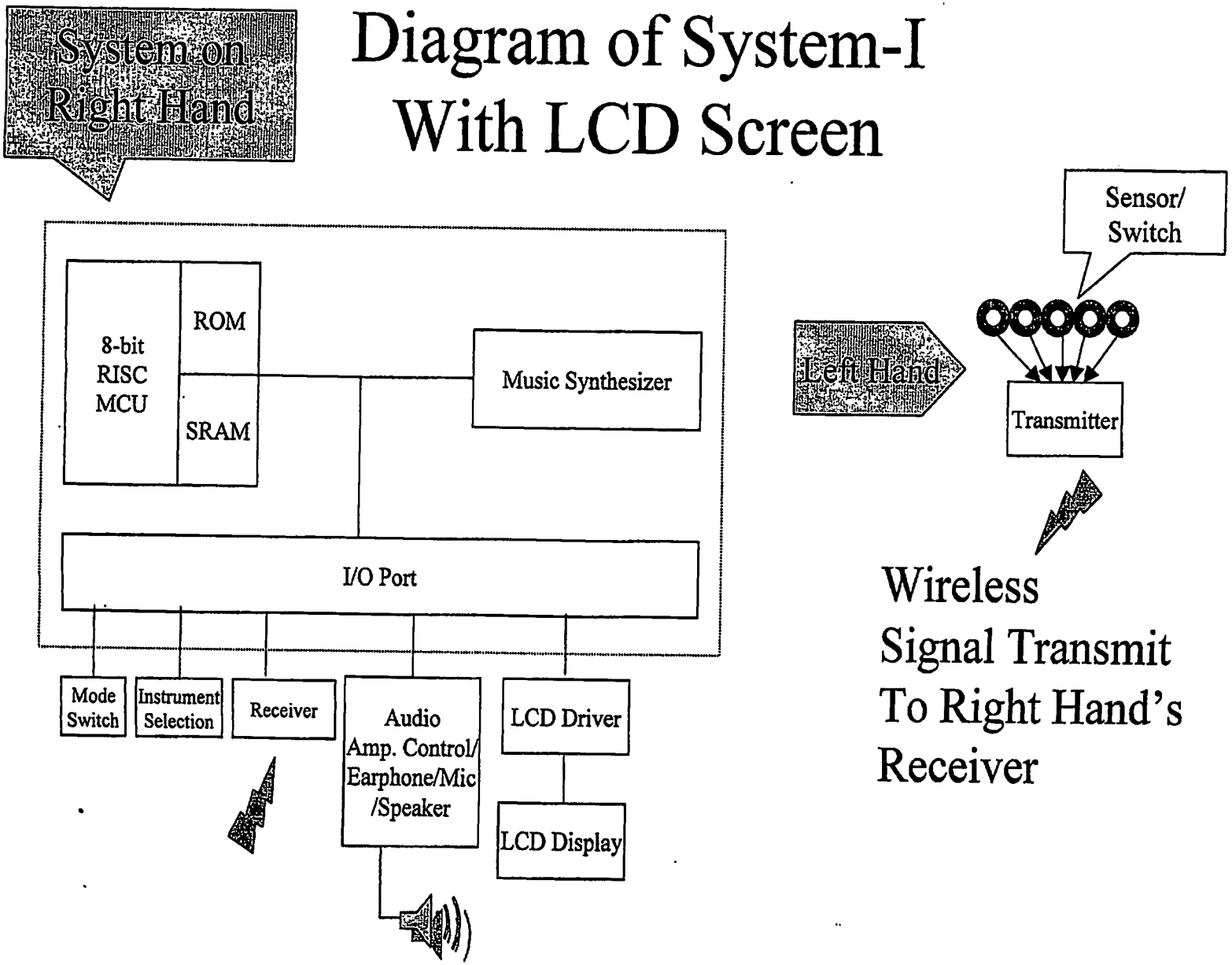
A1

Targets

- Funny.
- Simple for Operation.
- Wireless Transceiver.
- Play with Virtual Reality.
- High Technology Shape.
- Reasonable Cost.
- Easy to Mass Production.

A2

Diagram of System-I With LCD Screen



A3

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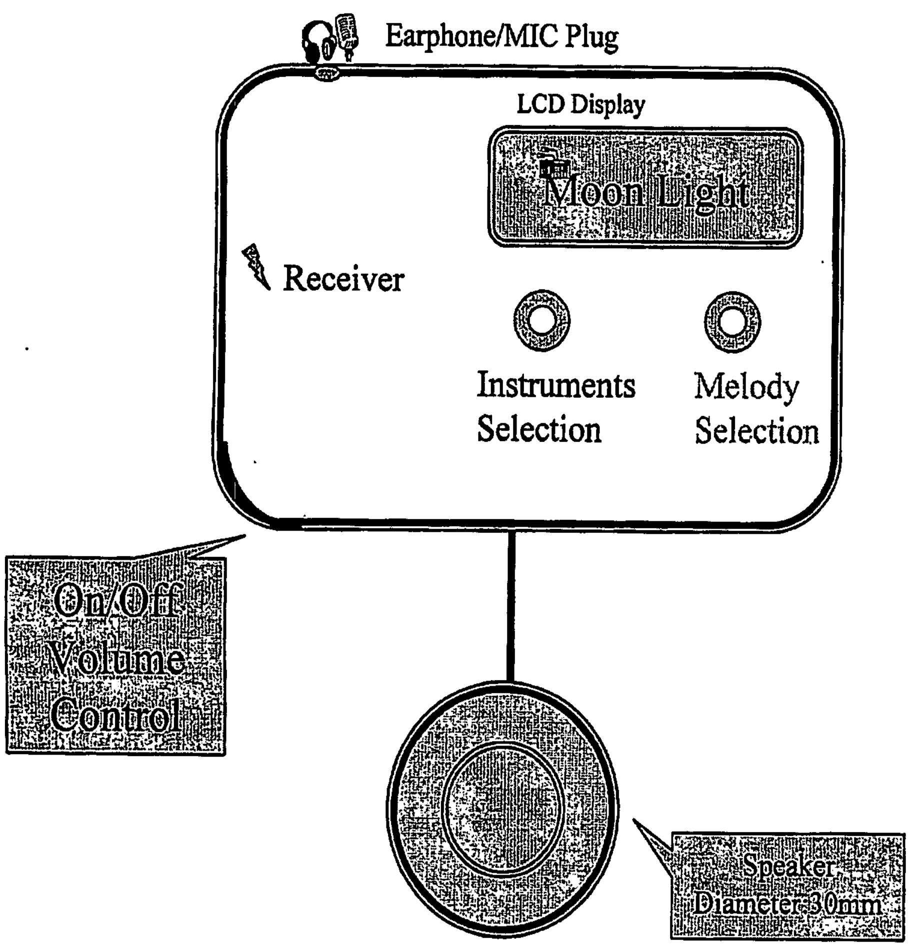
Outline of Right Hand-I



Spec.:

1.Sensors:5 High tech independent sensors.
2.Wireless: Receiver 27 MHz
3.Battery: UM-4*2
4.LCD display 1"*.5"shows the melody and instrument
5.Speaker: 30mm High quality speaker.
6.Earphone/MIC
7.Melody IC: 8 Channels IC (Designed for Electronic Piano Market)
8.On/Off & Volume Control in one knob.
9.Estimated size:
10.Estimated weight:

Functions:

- 3 instruments for selection.
- Mode I: Playing user's melody.
- Mode II: Auto play, rhythm according to user's fingers motion speed.

A4

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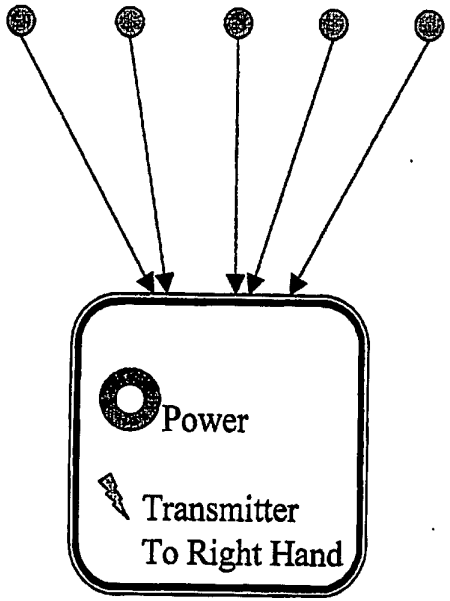
Diagram of Left Hand-I & II

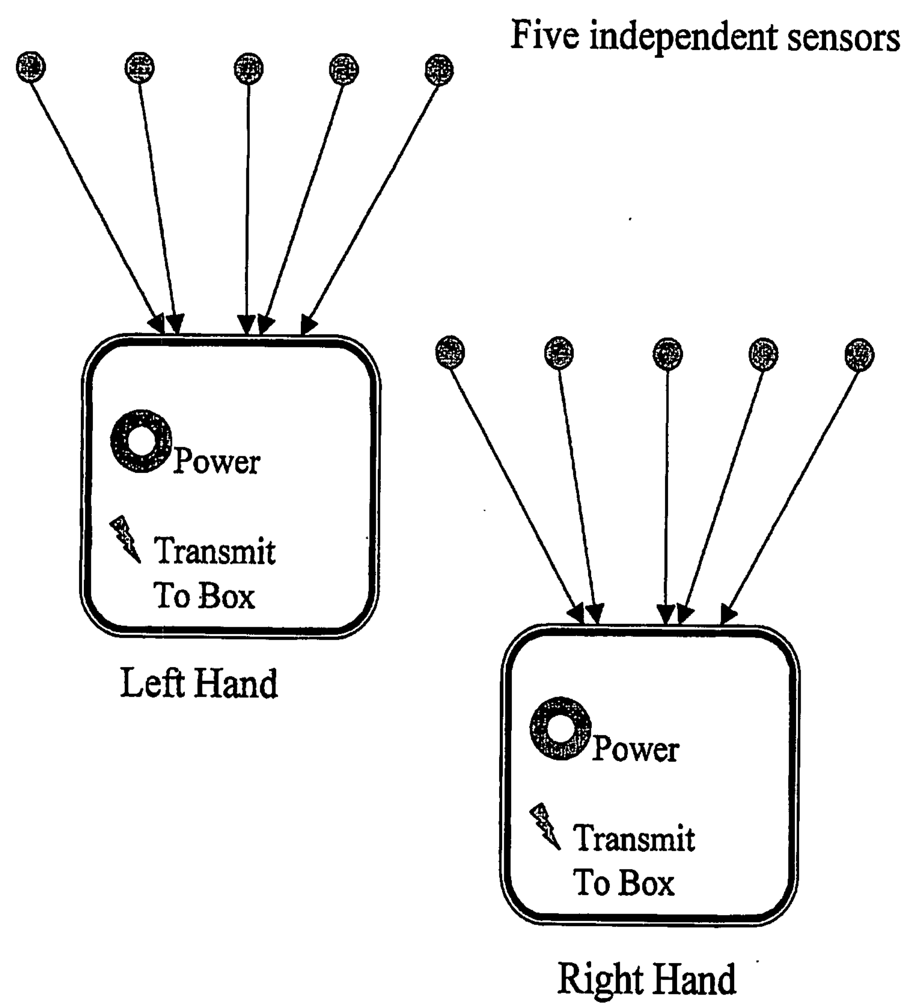


Five independent sensors

Spec.
- Sensors:5 independent sensors
- Transmitter: 27 MHz
- Battery:UM4*1

A5

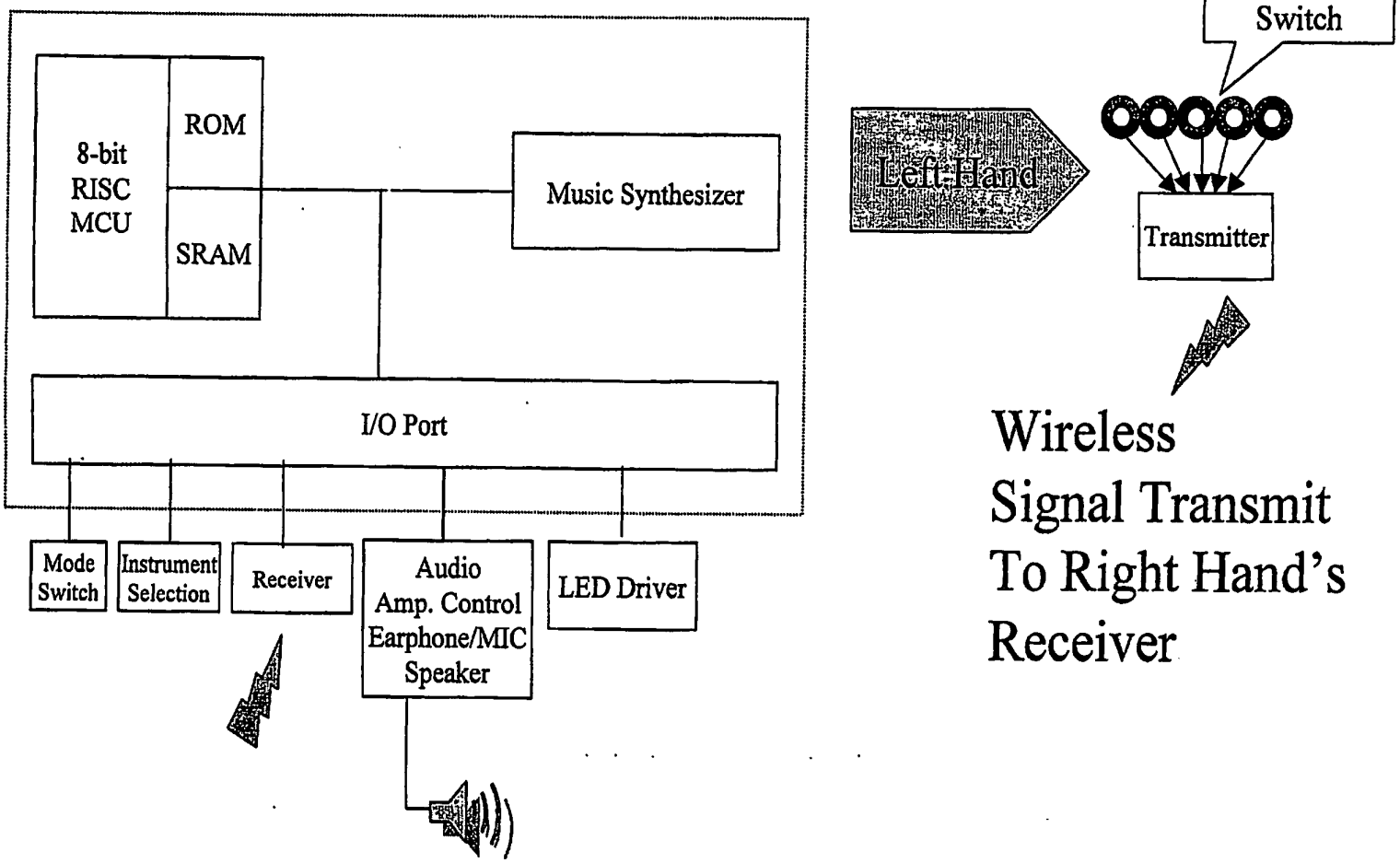
Diagram-Left & Right Hand-III



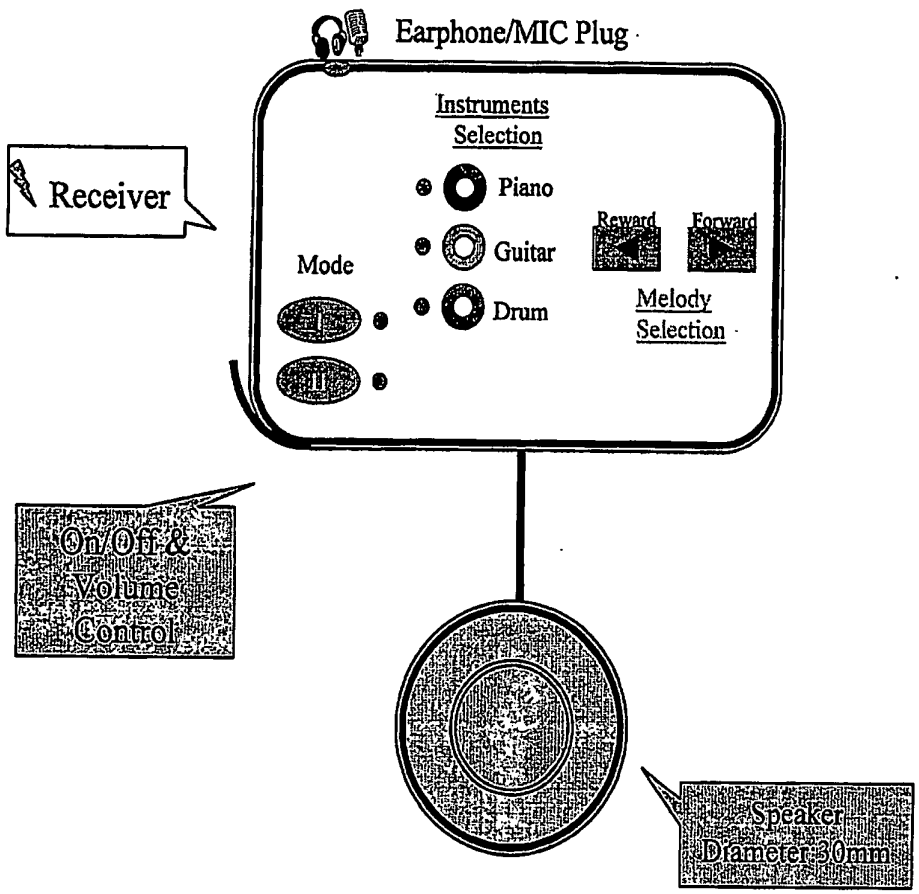
Spec. (Each is the same)
- Sensors: Each hand has 5 independent sensors
- Transmitter: 27 MHz
- Battery:UM4*1

A6

Diagram of System-II Without LCD Screen



Outline-Right Hand-II



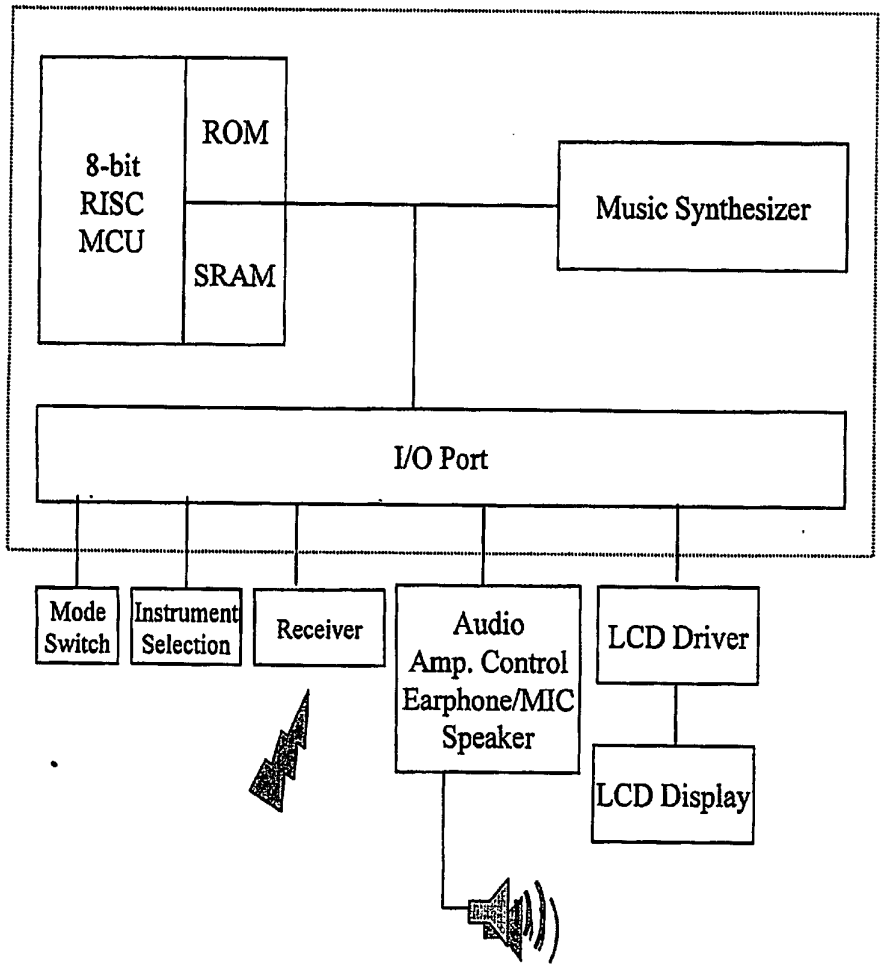
Spec.:
1.Sensors:5 High tech independent sensors
2.Wireless: Receiver 27 MHz
3.Battery: UM-4(AAA)*2
4.LED status indicator
5.Speaker: 30mm High quality speaker.
6.Earphone/MIC
7.Melody IC: 8 Channels IC (Designed for Electronic Piano Market)
8.On/Off & Volume Control in one knob.
9.Estimated size:
10.Estimated weight:
11.10 melodies build inside.

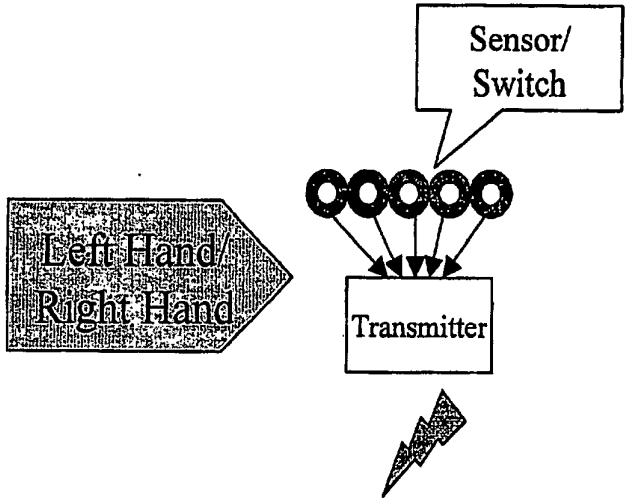
Functions:
- 3 instruments for selection.
- Mode I: Playing user's melody.
- Mode II: Auto play, rhythm according to user's fingers motion speed.

A8

System in Box on belt

Diagram of System-III In Box On Belt





Wireless Signal Transmit To Right Hand's Receiver

A9

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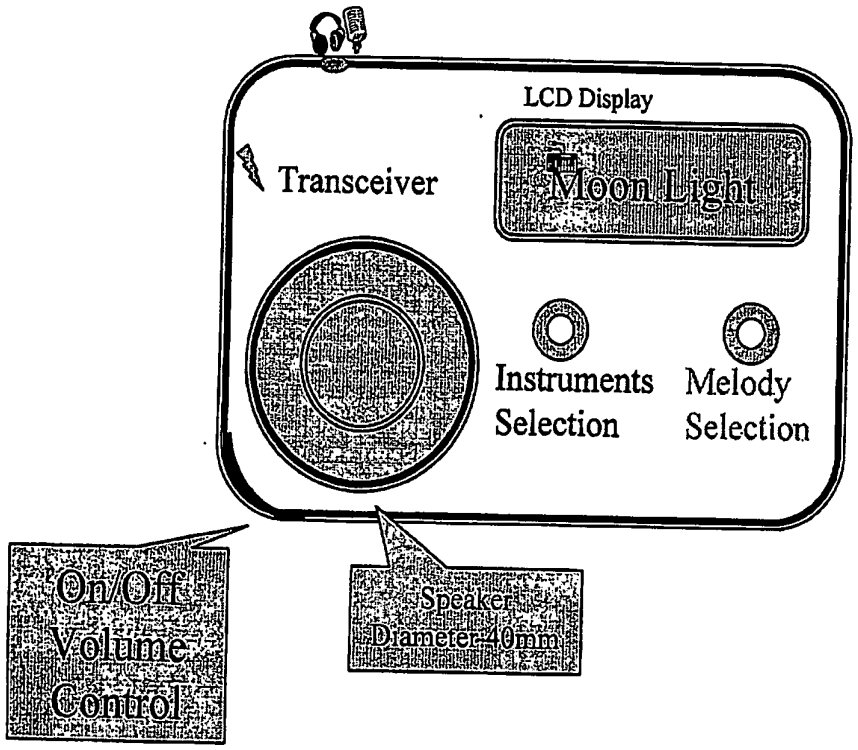
Outline-Right Hand-III



Spec.:
1.Sensors:5 High tech independent sensors
2.Wireless: Receiver 27 MHz
3.Battery: UM-4*2
4.LCD display shows the melody and instrument
5.Speaker:High quality speaker.
6.Earphone/MIC
7.Melody IC: 8 Channels IC (Designed for Electronic Piano Market)
8.On/Off & Volume Control in one knob.
9.Estimated size:
10.Estimated weight:

Functions:
- 3 instruments for selection.
- Mode I: Playing user's melody.
- Mode II: Auto play, rhythm according to user's fingers motion speed.

A10

Play Instruction of Piano

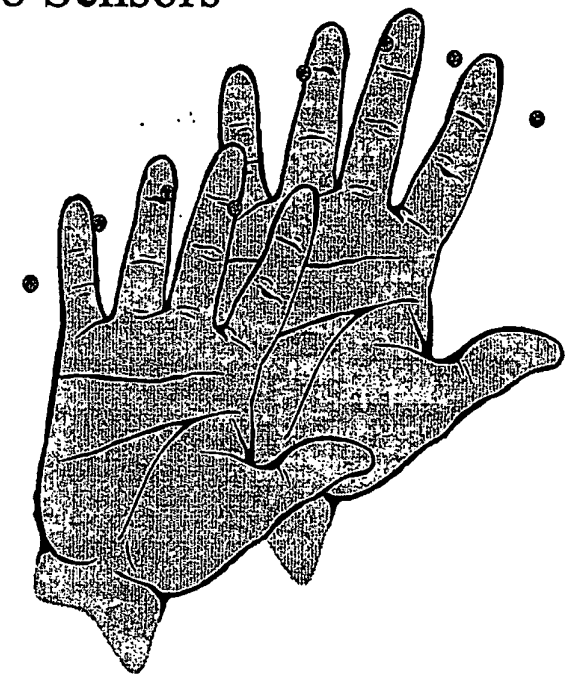
- Mode I

  Each palm has four touch sensors. Eight sensors play eight tones; Do Re Mi Fa So La Si Do.

- Mode II

  Melodies auto play when user's fingers touched on the plate, and the rhythm according to the user's motion speed.

- 8 Sensors

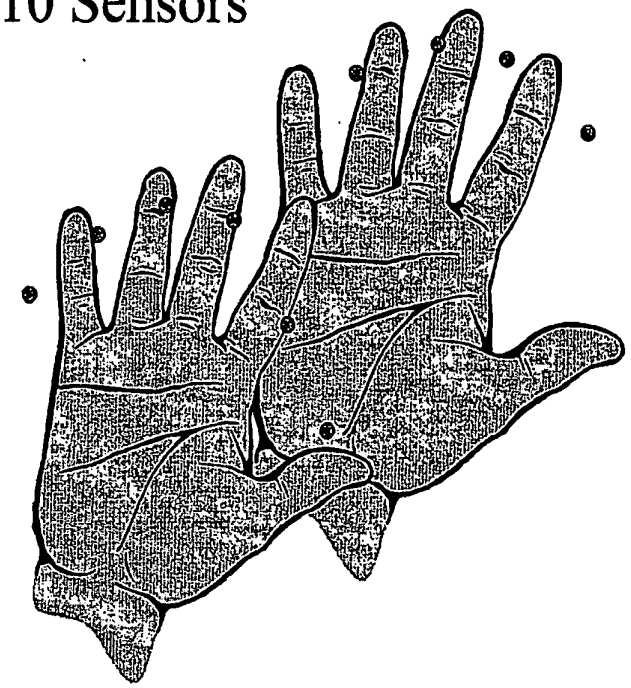


A11

Play Instruction of Drums

- Mode I
- Mode II

- 10 Sensors

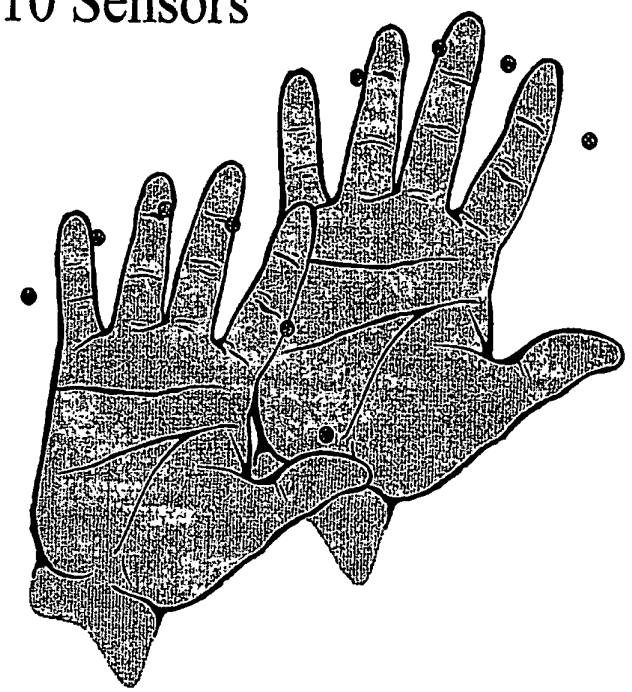


A12

Play Instruction of Guitar

- Mode I
- Mode II

- 10 Sensors



A13

K-Group Industries, LLC
K-Group Industries, LTD

- Personal & Confidential
- Prepared By: KGI-U.S.
- Accompanying Documents:
  a) Confidentiality & No compete Agreement
  b) Non-Disclosure & Consulting Agreement

A14

Project Definition

- Category/Brand: **Body-Groovz©**
- Product Name: **HandBand Glovz® (Percussion/Wind Series)**
- Target Age Group: B&G 7-12 Years
- Markets: U.S., Europe & Canada
- Release: July, 2003
- Target Cost: US$7.63*

A15

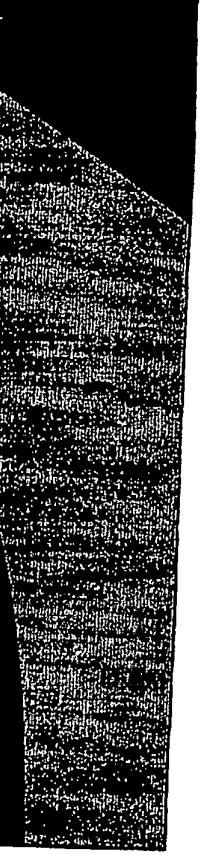
Concept "A" Definition-Gloves & Belt Console

- Belt Console: Different IC's representing different instrument sounds.
- LCD Screen with mode selector-Electric Guitar, Keyboard, Drum Machine.
- Belt console contains internal speaker (3") with wireless FM transmission capability.
- Belt console contains sound effects buttons (6), volume control, Internal/External sound switch

A16

Concept "A" Definition (Cont.)

- **HandBand Glovz®**-Neoprene/Elastic gloves fitted with sensors on fingertips and finger joints.
- Depending on which mode selector is active, the activation of one sensor or several together will produce distinct sounds



A17

Concept "B" Definition-Gloves as full-purpose product

- Right & Left handed glove contain IC's built in
- Contain the LCD screen and corresponding mode selector
- Integrated speaker (3")
- FM Wireless transmitter
- Volume Control/Special Effects Buttons
- Headset Connecton

A 18

HandBand Glovz® Concept
"A" Sketch

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A 19

HandBand GlovzR Concept

"A" Sketch

A 20

HandBand GlovZ® Concept
"B" Sketch

HandBand GlovZ® Concept "B" Sketch

A 22

HandBand Glovz® Wind Instrument Series (Concept "A" or "B")

- Main Unit: Same characteristics
- LCD Screen with mode selector- Harmonica, Trumpet, Saxophone

Chrome Style Finger Tips
Built-in Sensor to detect movement
Bold Flexable Rubber Wire Gides
Touch Sens
Large Opening For Better Streich and Fit
Thin Neoprene
Small Battery and Electronics Compartment
LCD Screen
Volume Control
Infrared
3.5 mm Line Out
3.5 mm Headphone
3.5 mm Direct Glove Connection
Back View
Belt Clip

A 24

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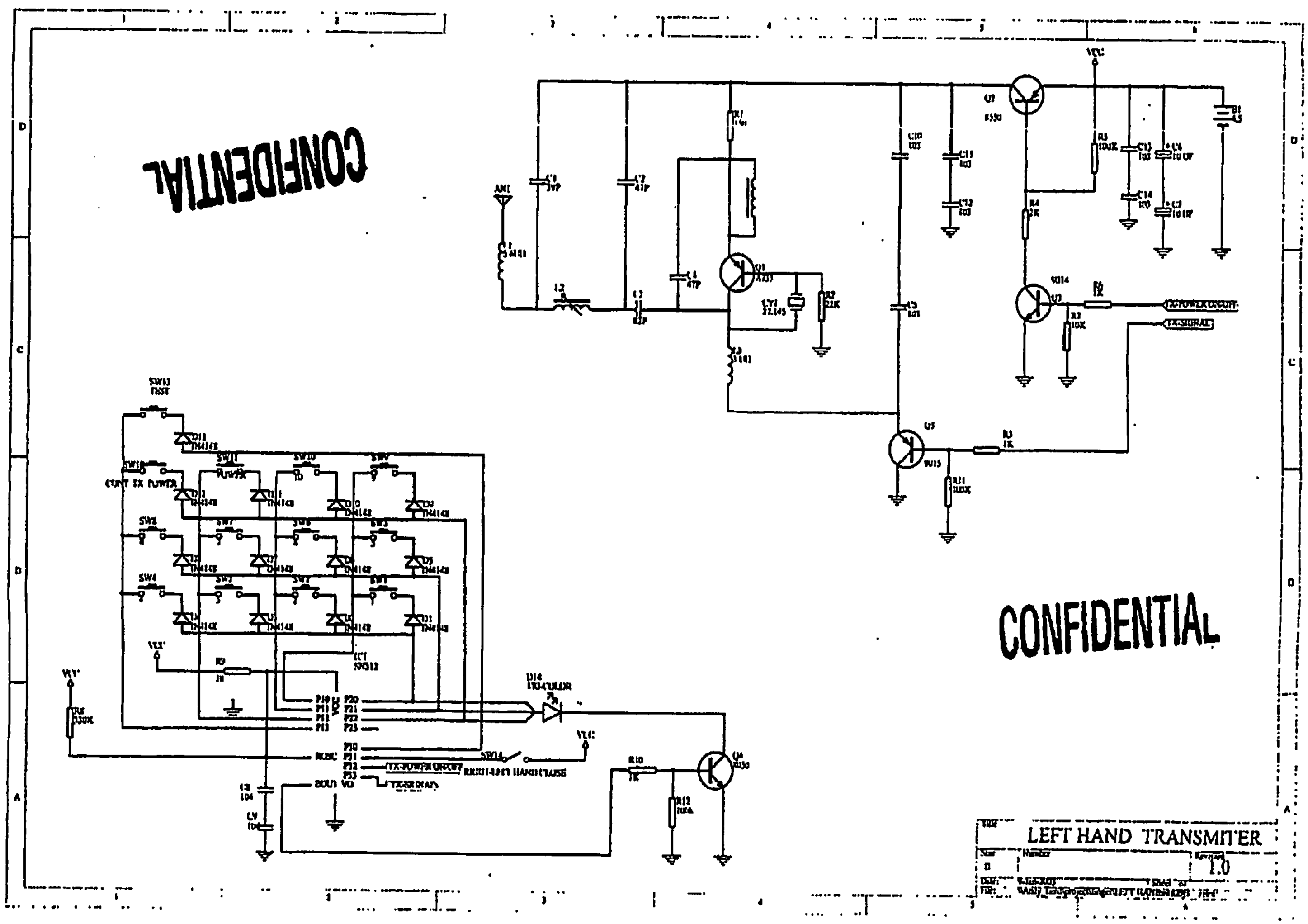
KADER INDUSTRIAL COMPANY LIMITED



A 25

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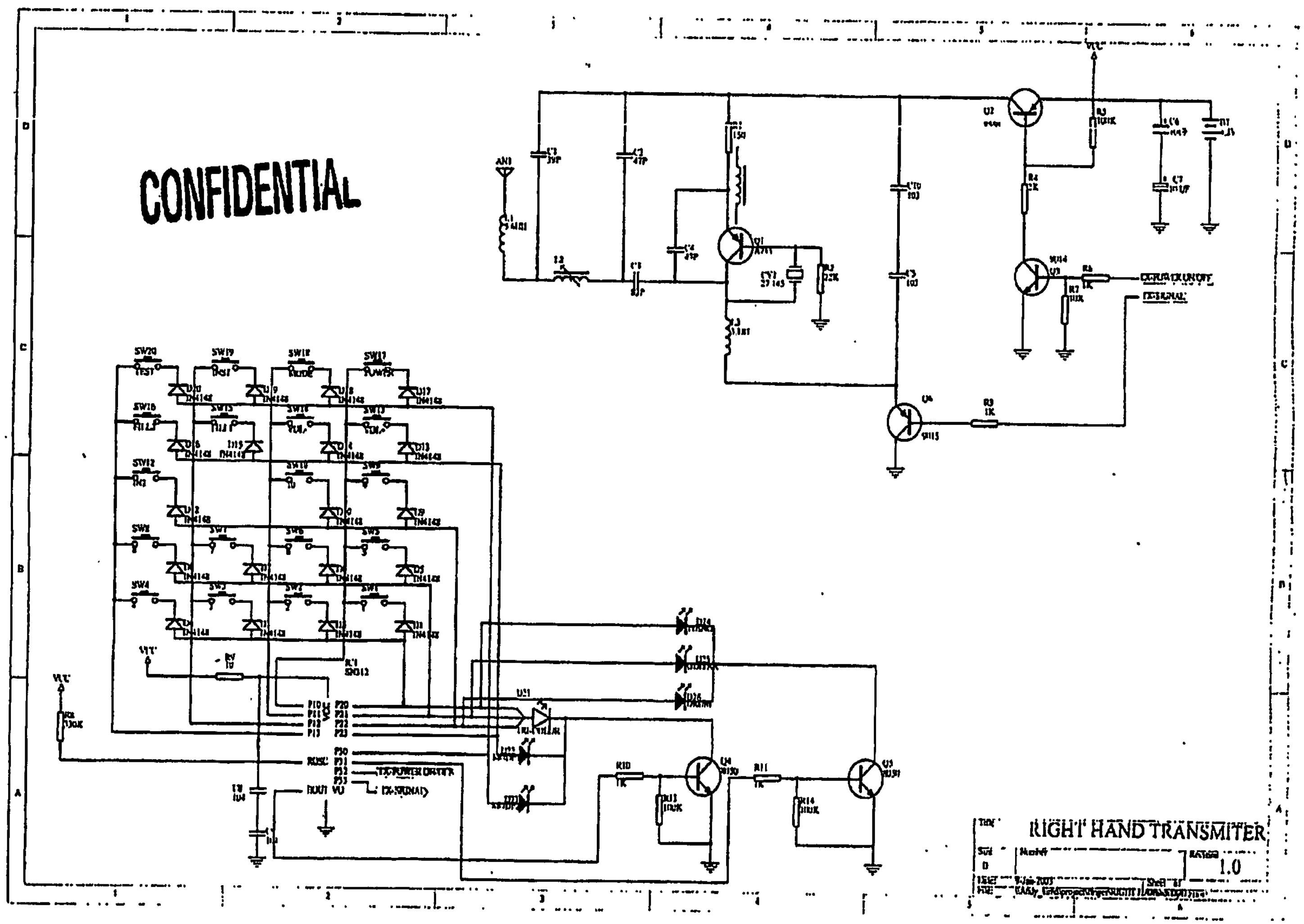
KADER INDUSTRIAL COMPANY LIMITED

CONFIDENTIAL



A26

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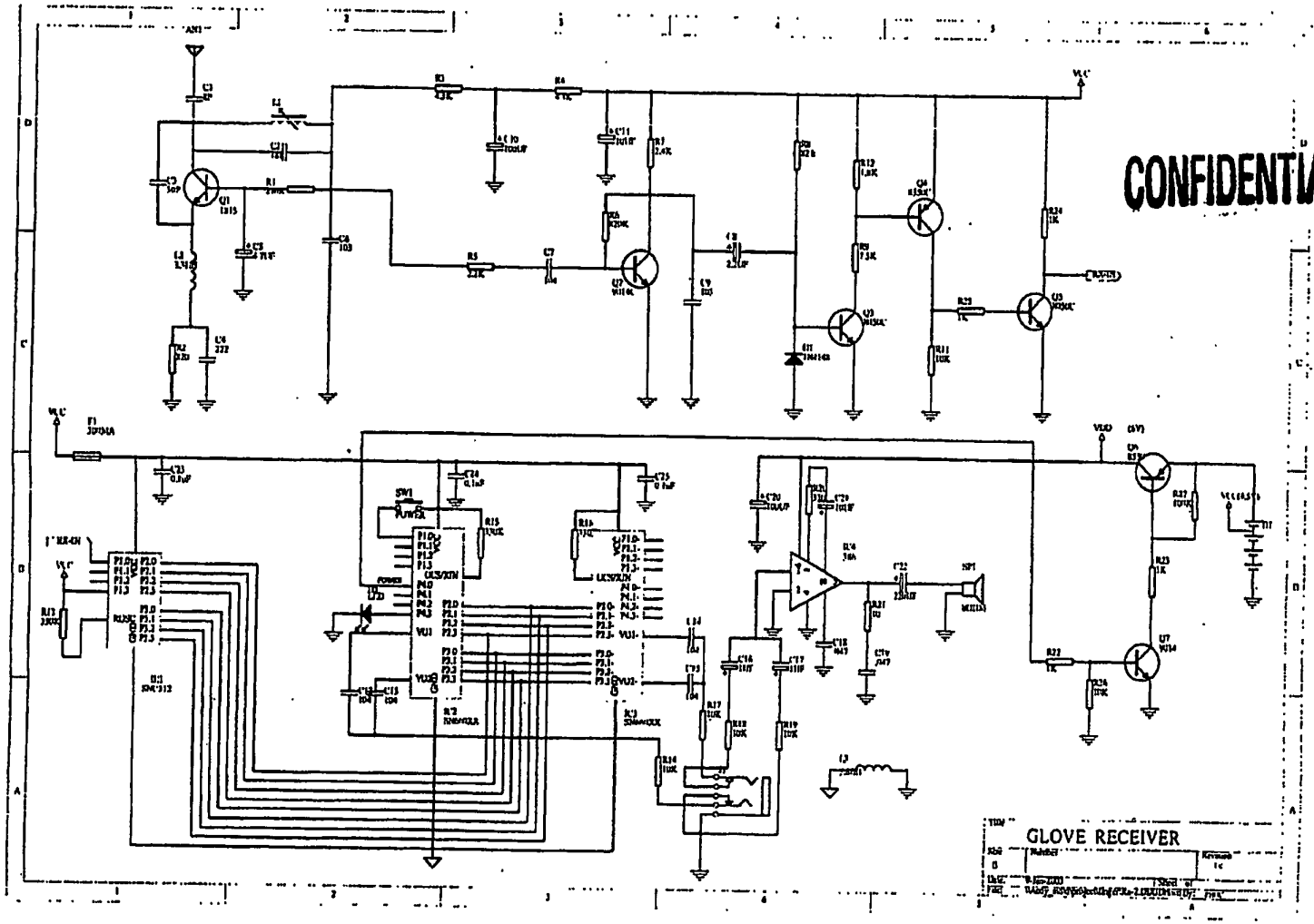
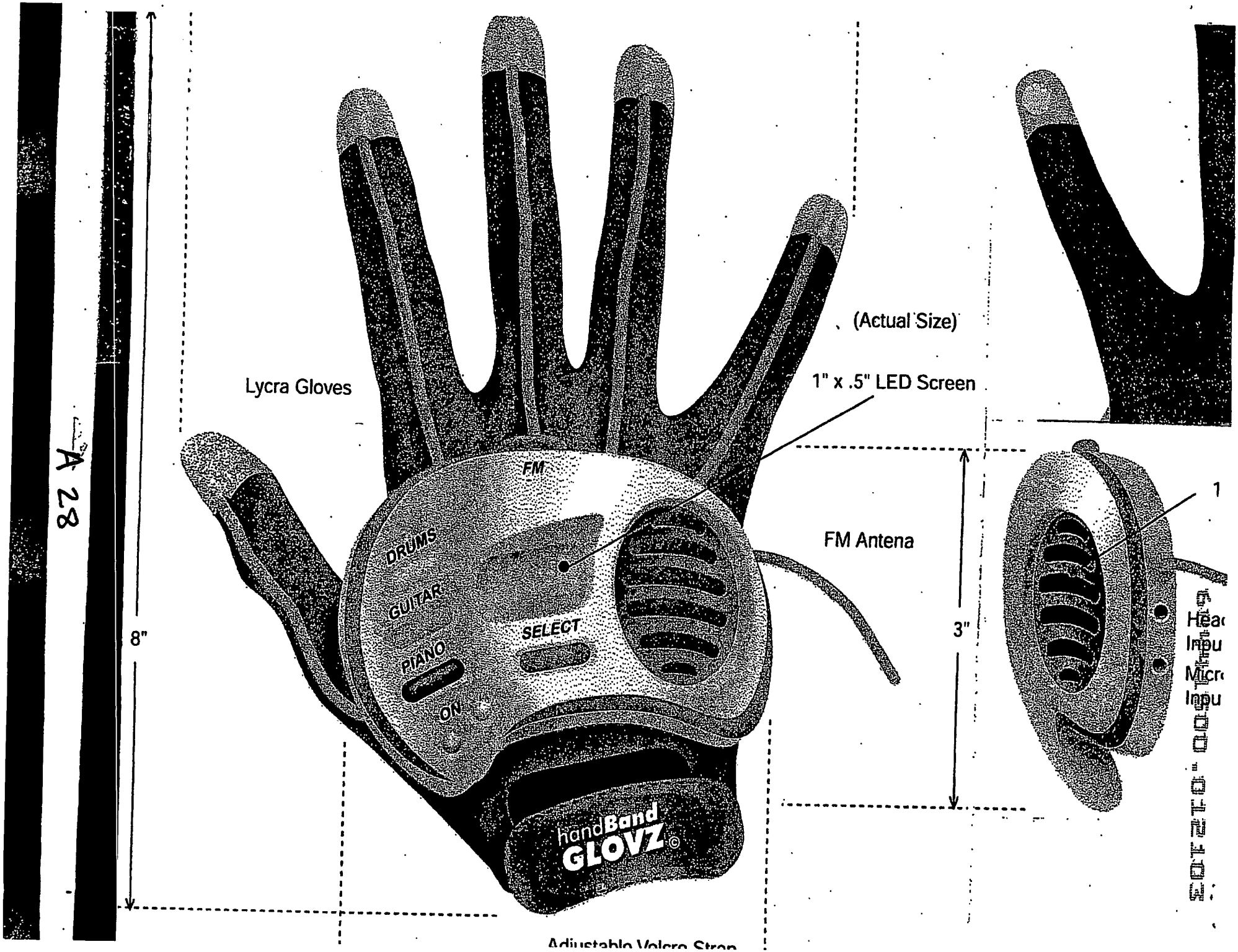
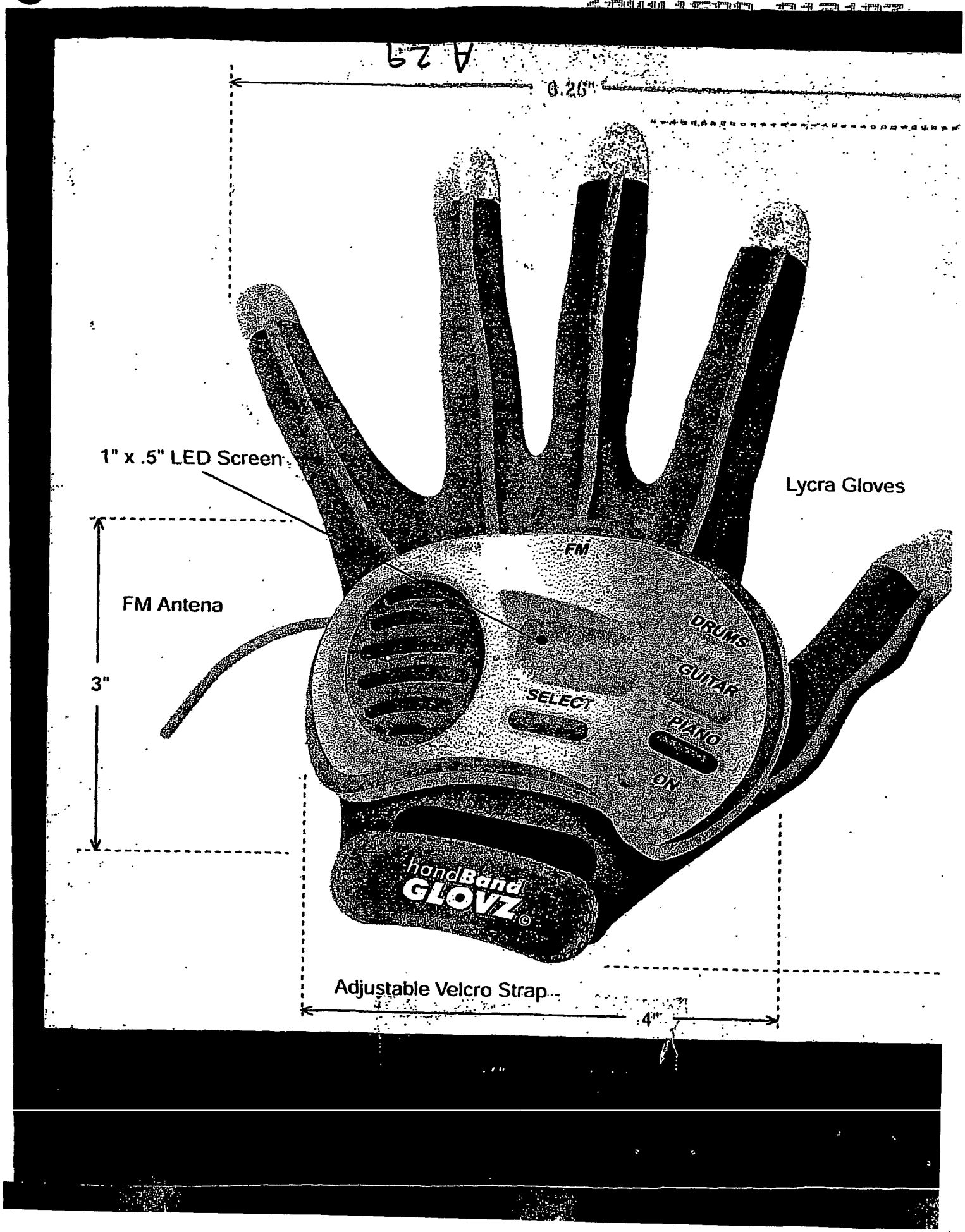
開達實業有限公司
KADER INDUSTRIAL COMPANY LIMITED

CONFIDENTIAL



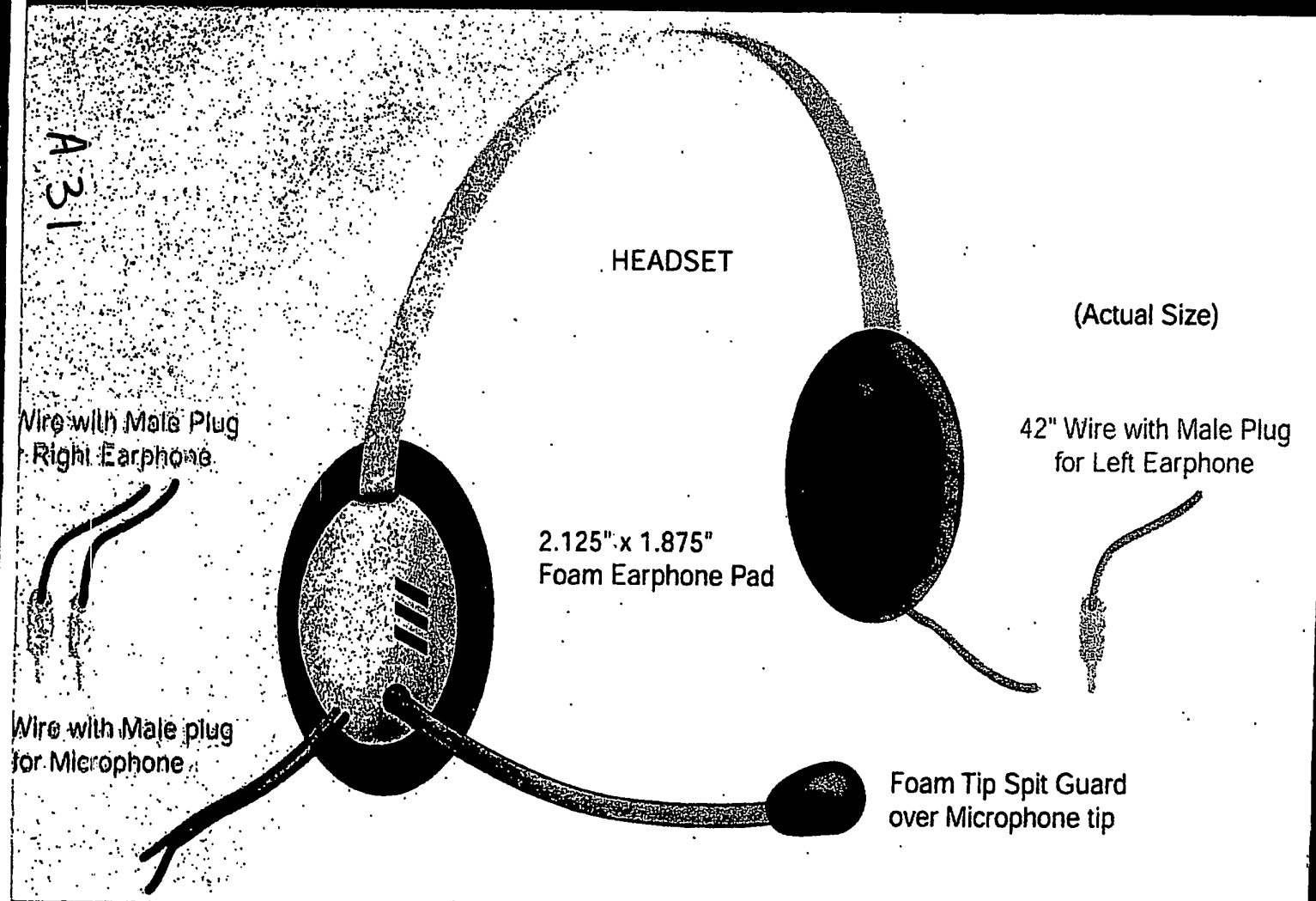
A27

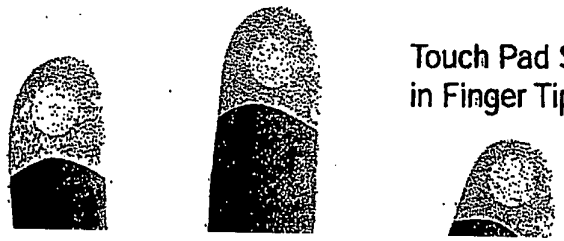

A 28
8"
Lycra Gloves
FM
DRUMS
GUITAR
PIANO
ON
SELECT
handBand
GLOVZ ©
(Actual Size)
1" x .5" LED Screen
FM Antena
3"
Adjustable Velcro Strap


A 29
6.25"
1" x .5" LED Screen
Lycra Gloves
FM Antena
3"
FM
DRUMS
GUITAR
SELECT
PIANO
ON
handBand
GLOVZ ©
Adjustable Velcro Strap
4"

(Actual Size)
1" x .5" LED Screen
FM Antena
3"
1.5" Speaker
Headphone Input
Microphone Input
Side View of Glove Finger
Sewn-in wire from Sensor Pad to Receiver Device
Touch Sensor Pad
Adjustable Velcro Strap
SELECT
GLOVZ©

A-31


HEADSET
(Actual Size)
Wire with Male Plug
Right Earphone
42" Wire with Male Plug
for Left Earphone
2.125" x 1.875"
Foam Earphone Pad
Wire with Male plug
for Microphone
Foam Tip Spit Guard
over Microphone tip


Touch Pad Sensors
in Finger Tips